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LAND DEGRADATION AND SUSTAINABLE DEVELOPMENT IN ZIMBABWE: AN HISTORICAL PERSPECTIVE

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Abstract:
Zimbabwe's problems of land degradation date back to the colonial era when the Rhodesian government created native reserves, the so-called Tribal Trust Lands (TTLs) in 1926. Through the enactment of the Land Apportionment Act of 1930, the country was subdivided into European and Native Lands. Since the Act ignored the population disparities of these areas, an environmental crisis was bound to occur in the near future. Furthermore, the Europeans took the best agricultural land while blacks were relegated to the drier and less productive areas. Due to the introduction of the ox-drawn plough, the communal lands were subjected to massive land degradation in the form of deforestation and soil erosion. Although massive land re-distribution has occurred since 2000, land degradation has spread to the newly-resettled areas as human and livestock populations continue to increase in these former white farms. The demand of timber for building purposes as well as wood fuel in these areas, have worsened the environmental crisis. In tobacco farming areas deforestation has been worsened by the demand for energy to cure the harvested crop. Another challenge has been that of a weak environmental education (EE) programme which focuses on scientific facts about the environment rather than behavior change. Organizations such as the Environmental Management Agency (EMA) are not well equipped to provide their mandate due to the lack of resources, vehicles for transport and inadequate manpower. Based on information that was collected in September, 2017, this paper examines Zimbabwe's land degradation problem from an historical perspective. It argues that unless the rate of deforestation and soil erosion are curbed or reduced, Zimbabwe's dream of

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achieving sustainable resource conservation in future is unlikely to be achieved in the long run.

Keywords: land degradation, soil erosion, deforestation, sustainable development, Zimbabwe

1. Introduction

Since the early days of colonial rule, Zimbabwe's economy has always been agro-based even though gold mining had been one of the major causes of colonization (Bulpin, 1968). Until 2000, some 4 500 white farmers controlled a remarkable amount of productive agricultural land (Scoones, 2017). On the other hand, most indigenous blacks occupied the former native reserves or Tribal Trust Lands (TTLs). At the time of colonization in 1890, there were about 400 000 blacks in the whole of Zimbabwe (Whitlow, 1988). Most areas were sparsely populated even though none was un-claimed by one or more of the indigenous tribes (Kay, 1970). After the defeat of the Ndebele (1893) and the Shona (1896-7) rebellions, the white settlers divided the country into European and Native areas (Mpofu, Muponda, Mutami and Tavuyanago, 2009). By 1910, some 8.5 million hectares of land (over one third of the country) had been declared as 'native reserves' (Whitlow, 1988). The so-called reserves or TTLs were mainly located in areas where Africans were living at the time, especially the more densely settled ones. However, no account was ever taken of the population displacements which had occurred during the rebellions. Most of the European farms were concentrated in the central watershed region in close proximity with the railway line between Mutare, Harare and Bulawayo. By 1911, the African population had grown to 700 000 and 60% of them lived in the reserves (Whitlow, 1988). The white settlers believed that what the Africans had been given was enough for both contemporary and future needs (Kay, 1970).

However, as the African population grew due to both natural increase and in-migration of families displaced from new European farm-lands, overcrowding emerged leading to land degradation. Soil erosion became a major problem in these areas, compounded by the introduction of the ox-drawn plough which replaced hoe cultivation. Ploughing required the complete clearance of vegetation unlike the traditional hoe cultivation which had been applied for centuries. However, no attempt was made to address the problems of African areas until much later. In 1924 agricultural demonstrators were employed in order to educate black peasant farmers on how to manage their lands (Whitlow, 1988). This development took a long time because it had not been a priority of the settler government (Kay, 1970).

2. Research Methods

This study is based on secondary and primary sources of information. Secondary sources included research on the issue of land degradation in Zimbabwe. Several sources of information were consulted including: textbooks, government documents such as Acts of parliament, newspapers and the internet. On the other hand, primary sources like interviews and questionnaire surveys, which targeted government agencies such as the Ministry of Agriculture and Mechanization, AGRITEX and EMA, were employed in order to collect the necessary data. Questionnaire surveys and interviews were conducted in September 2017. Information derived from these sources was analyzed and it yielded the views that are expressed in this paper.

3. Land Degradation during the Colonial Era

Whitlow (1988) has examined the degradation of native land during the colonial era under several sub-headings which include: Phase 1: Creation of Reserves before 1926, Phase 2: Centralization 1926-1951, Phase 3: Agrarian Reform 1951-1962, Phase 4: Uncertainty 1962-1969 and Phase 5: Growing Pressures Post 1969. These phases are examined in brief in this paper.

Phase 1: Creation of Reserves before 1926

The alienation of land from blacks by white settlers inevitably laid a foundation for land degradation in the TTLs. Blacks were forced to occupy marginal areas which were not suitable for cultivation. Such conditions accelerated land degradation especially in those areas which soon became over-crowded. Examples of these areas were Mutoko, Zimunya and Chivi (Whitlow, 1988). These areas fall under ecological regions IV and V (Kay, 1970). Massive deforestation for the purposes of human settlement and cultivation accelerated soil erosion. This was compounded by the introduction of the ox-drawn plough, as mentioned previously. Soon it became obvious that these areas were overcrowded and poorly managed. However, the colonial government was unwilling to admit that blacks needed more land. Hence the situation continued to worsen with time.

Phase 2: Centralization

As conditions worsened in the TTLs, it soon became obvious that something had to be done in order to avert the crisis. Consequently, in 1926 the government appointed Lord Alvord to educate the blacks on how to manage their lands. Alvord organized land-uses in the TTLs into three categories which included: villages, grazing areas and arable

lands. Some grazing areas were fenced off in order to prevent livestock from straying into crop lands. This strategy known as *centralization*, greatly improved both farming and conservation in these areas. The strategy began in Shurugwi in 1929 and later spread to other parts of the country. By 1946 about 3.8 million hectares in densely populated areas had been centralized.

Alvord also introduced contour ridges and storm drains in many parts of Zimbabwe. Beginning in 1936 under the supervision of soil conservation officers and native demonstrators, by 1938 some 6 510 hectares of arable land had been protected against erosion (Whitlow, 1988). However, grazing areas remained un-protected until 1944 when conservation measures were extended to them (Kay, 1970). During the 1920s the colonial government viewed land degradation in the TTLs as a result of such malpractices as indiscriminate cultivation, uncontrolled grazing and the lack of conversation knowledge. However, the peasants saw the problems as symptoms of the need for more land (Whitlow, 1988). On the other hand, the Land Apportionment Act of 1930 effectively ruled out any possibility of more land being given to Africans.

In 1941, the Natural Resources Board was promulgated by the colonial regime. It made three recommendations. The first one was the conservation of degraded lands in the reserves. It was recommended that these areas should be guarded against further use by people or domestic animals. The second solution was the reduction of livestock numbers where there was evidence of overgrazing. Finally, the natives were obliged to adopt soil conservation measures. However, since the government lacked the will and funds to implement these recommendations, only destocking was applied. This was unpopular among the natives who were being politicized by black nationalists. It was also not clear to the natives how de-stocking would improve their livelihoods. Hence the cry for more land intensified (Kay, 1970).

In response to increasing land degradation in communal areas and pressure from nationalists, in 1950 the government set up Special Native Areas (SNAs) amounting to 1.7 million hectares (Whitlow, 1988). These were derived from un-used European land. By then the population living in reserves was about 1.25 million thereby exerting much pressure on limited resources. Alvord's centralization scheme, which had started as a voluntary project based on persuasion, became compulsory as the government tried to reduce widespread land degradation in the reserves. At that time, only 20% of these areas had been protected against soil erosion (Kay, 1970).

Phase 3: Agrarian Reform 1951-1962

In order to address the problem of land degradation in communal areas, the Rhodesian government introduced the Native Land Husbandry Act (NLHA) in 1951. The NLHA had three components. Firstly, it had a legal backing for the enforcement of

conservation measures. Secondly, it adopted good farming practices. Thirdly, it replaced the traditional land tenure system with one based on individual rights. The NRB thought that security of tenure would make farmers more responsible and accountable for any mis-management of the land. This is because any failure to do so would result in legal action being taken against offenders (Kay, 1977). Following the introduction of the NLHA, remarkable progress was achieved. For example, by 1957 more than 200 000 hectares of arable land had been protected through contour ridges and grass waterways. Plans were also underway to extend the programme to about two thirds of the communal areas by 1961 (Whitlow, 1988). More than US $3.4 million was spent by government on conservation works in both TTLs and SNAs. This represented 9.8% of the total budget of the NLHA (Kay, 1970).

However, this apparent success should be treated with caution as most contour ridges lay outs were poorly designed. This was due to the shortage of surveyors who were responsible for pegging ridge and plot boundaries. Furthermore, most of the ridging was done by women and children who were already over-burdened by domestic chores. Due to the rural-urban migration of able-bodied men in search of employment, commercial areas were left with inadequate manpower. Numerous examples of poorly constructed contour ridges were found in Mutoko and Chiweshe (Whitlow, 1988). However, at national level the progress was a success even though it had to be abandoned in 1962 due to political pressure from black nationalists. In some areas such as Mazvihwa it persisted way into the 1970s.

Phase 4: Uncertainty, 1962-1969

The period of uncertainty started in 1962 and it also coincided with the collapse of the federation of Rhodesia and Nyasaland. There was a re-organization of administrative and technical structures as well as a review of policies. During this period Conservation and Extension (CONEX) took over the responsibility of agricultural extension services in the TTLs. On the other hand, government gave more power to traditional leaders such as chiefs so that they could deal with local tenure issues. It was hoped that this would improve agricultural output. Environmental education (EE) was introduced in order to educate tribal leaders on the need for conservation from 1965 onwards. In primary schools, it was taught as *nature study* (Chikunda, 2007). A model peasant farm was established at the Henderson Research Station (Mazowe) in order to teach traditional leaders how to improve output without causing harm to the environment.

From 1966, Tribal Authority Conservation Committees were initiated so as to develop communication between the NRB, extension staff and peasants. By 1969, at least 46 committees had been set up throughout the country and were very effective in the enforcement of conservation regulations. In 1963, the government established a

Lands Inspectorate Service in order to enable peasant farmers to apply basic conservation measures. By 1967, this organization together with CONEX had greatly improved soil conservation in many tribal areas (Whitlow, 1988). However, in spite of these efforts, the problem of land degradation persisted in many parts of the country. This was mainly due to population pressure, which reduced agricultural productivity (NRB Report, 1967).

Phase 5: Growing Pressures, Post 1969

The 1970s were dominated by political, economic and security turbulence which forced the Rhodesian government to revise its land policies. This led to the Land Tenure Act of 1969, which sought to re-distribute land equally between blacks and whites. However, according to Whitlow (1988), this was a cosmetic piece of legislation as it ignored land quality issues and population disparities between the races. The geographical distribution of communal areas (TTLs) was never altered and the best agricultural land remained firmly in the hands of the Europeans. The new Act had three major implications. Firstly, it gave more power to traditional leaders in the allocation and use of land. Secondly, it ruled out the possibility of any further land acquisition from European areas. This is because the government held the view that solutions to the problems of land degradation lay in agrarian reform rather than land acquisition. Thirdly, the frustration of peasant farmers resulted in lack of cooperation with government officials and increasing support for guerrilla forces.

However, in spite of these developments, by the end of 1972, some 80% of the communal areas had been protected through contour ridges. Soon after independence, the new black government recognized land hunger as a problem and embarked on land re-distribution at the national level (Chibisa and Mapira, 2013). But owing to restrictions from the Lancaster House Treaty and corruption from the new black elite, little progress was achieved until the end of the millennium (Tshuma, 1997). Since 2000, the country has embarked on a massive land reform programme known as the Fast Track Land Reform Programme (FTLRP) (Bond and Manyanya, 2003). However, most of the beneficiaries of the programme have been supporters of the ruling party, Zimbabwe African National Union-Patriotic Front (ZANU-PF). As a result, the problem of land hunger among most peasants remains critical even though 90% of all the former white commercial farms have been expropriated (Chibisa and Mapira, 2013). Land degradation has also emerged in the newly resettlement areas due to deforestation, soil erosion and desertification. The poaching of wood fuel and wildlife in these areas has worsened environmental problems in these areas up to the present day.

4. Land Degradation in African Purchase Areas (Apas)

The Native Purchase Areas (NPAs) were established in 1930 as part of the Land Apportionment Act. They were aimed at accommodating the more competent black peasant farmers who would embark on commercial farming (Whitlow, 1988). At its inception, the NPA programme set aside some 3.3 million hectares for this purpose. The farms averaged 90 hectares each. By 1964, these areas were known as African Purchase Areas (APAs). However, throughout their history, they encountered problems of land degradation. This was mainly due to the lack of financial and manpower support for basic construction and maintenance of conservation measures.

The lack of conservation committees in these areas worsened the problem. Hence, it was not until 1961 that these committees were increased in number and their status was upgraded to that of Intensive Conservation Area Committees (ICACs) in European farm lands. From that period, conservation efforts became more effective. However, due to lower population and stocking pressures, these areas never experienced land degradation problems as badly as TTLs.

5. Land Reform and Land Degradation

A study conducted during the early 1990s revealed that Zimbabwe comprised four sectors of land ownership (Whingwiri, Mashingaidze, and Rukuni, 1992). The first one was the commercial areas sector where land was held under various forms of traditional and communal ownership. Since the land belonged to the state no one had legal title to it. Each household managed its arable area privately. However, livestock grazed on communally held areas. This type of ownership has persisted up to the present day. The second type was the small-scale commercial farming sector which was situated in the former African Purchase Areas. The farms were held under freehold (private) title. Thirdly were the large-scale commercial farms which were held under freehold title.

Soon after independence, the government embarked on a willing-seller-willing buyer resettlement strategy, which led to the introduction of four schemes known as A, B, C and D (Whitlow, 1988). Model A was designed for dispersed settlements. Each household was granted 5 to 6 ha of cultivable land. In addition, they had access to 20-200 ha for communal grazing depending on the agro-ecological region. Model B was intended for cooperative farming organized by ex-combatants and former refugees. Such people occupied an existing commercial farm. This would create a nucleated settlement pattern. Model C was meant for smallholdings located around an existing estate. The core estate would encourage the contribution of smallholder production.

The fourth model was aimed at promoting the use of state ranching land for grazing livestock and harvesting wildlife by neighboring communities. These schemes were designed by the Department of Rural Development within the Ministry of Local Government, Rural and Urban Development. There were several aims of these schemes according to Munowenyu (1996): to decongest rural areas, to enable former peasant farmers to increase production through individual co-operative and state farms, to improve the standards of living of the previously under-privileged masses, to provide land for the land-less to use up either abandoned or under-utilized land and to expand infrastructure to these remote areas.

These schemes have been criticized for being too few and too slow (Whitlow, 1988). By the late 1990s, there were spontaneous land invasions in Mashonaland East by Chief Svosve and hiss people (Chibisa and Mapira, 2013). This incident reminded the government that the problem of land hunger had not yet been resolved. A referendum that was held in 2000 was rejected by the people. At the same time there was growing support for the opposition Movement for Democratic Change (MDC). The government panicked as the opposition received support from the white community. Hence the government embarked on the Fast Track Land Reform Programme (FTLRP). The aim of the programme was to expropriate over 4 000 farms from the whites. These farms were re-distributed to land hungry Zimbabweans. Most of the farms have been sub-divided in order to accommodate the new farm models, namely A1 and A2 farms (Chibisa and Mapira). The aim of the A1 model has been to decongest the overcrowded communal areas by resettling peasants in former white commercial farming areas. This model comprises three resettlement types namely the villagized, self-contained and the three-tier system.

The villagized model comprises residential, arable and communal grazing. Residential and arable portions range from three to five hectares per family depending on the ecological region of the area. Drier regions have bigger areas than wetter ones. On the other hand grazing areas are communally owned. The A2 model is intended for new indigenous farmers. It comprises three farming types, namely small-scale, medium-scale and large –scale. While the take-up rate in the A1 model was quite high ranging from 90% to 100%, in the A2 model it was relatively low averaging about 48% at the beginning of 2004 (Chibisa and Mapira, 2013). Most beneficiaries of the model were enlightened people who wished to minimize risks in their quest for farming. By the end of the 2008-2009 farming season, over 4 000 farms had been compulsorily acquired with 145 000 farm households resettled on A1 and 16 500 farm households resettled on A2 schemes.

According to Scoones, Marongwe, Mavedzenge, Murimbarimba, Mahenhene and Sukume (2011) A2 farms average318 ha in size while A1 plots average37 ha. At the

end of 2011 an estimated 170 000 households had been resettled while an estimated 200 to 300 white owned commercial farms were left un-scathed (Chibisa and Mapira, 2013). Resettlement programmes since 2000 have been characterized by land degradation in the form of soil erosion and deforestation. Virgin forests have been cleared in order to accommodate human settlements as well as the cultivation of crops. Due to the need for wood fuel to cure the crop, areas of tobacco plantations have been heavily de-forested. It has been noted that if this practice continues un-abated, Zimbabwe's forests may be totally destroyed within fifty years (Mapira, 2014). The government is now encouraging tobacco farmers to use coal in the curing process. However, coal is expensive and has to be ferried from Hwange by rail. However, since rail transport has broken down there is a serious problem in ferrying this product. On the other hand road transport is quite expensive and most farmers cannot afford it and often resort to the use of wood fuel.

6. The Quest for Sustainable Development In Zimbabwe

The publication of the Brundtland Commission report in 1987 was a land mark in the conservation of natural resources at the global level (WCED, 1991). For the first time, the term *sustainable development* (SD) emerged to become a household concept all over the world. SD has been defined as a concept whose aim is to '*meet the needs and aspirations of the present without compromising the ability to meet those of the future*' (WCED, 1991:40). Following the world commission on the environment, another major convention at the global level was convened in Rio de Janeiro in 1992. The conference resulted in the birth of Agenda 21, a detailed document comprising 40 chapters, which covered various aspects such as poverty, toxic waste, desertification, education and trade. The Rio Declaration, a separate document was also produced at the summit. According to Palmer (1998), while the Rio Declaration was a blue-print for a sustainable future, Agenda 21 became a guideline for its interpretation.

Following the Rio Summit, Zimbabwe promulgated a new Act, the Environmental Management Act of 2002, which was followed five years later by an Environmental Management Agency (EMA) (GoZ, 2009). EMA has offices at national, provincial and district levels (Mapira, 2014). However, since its inception, it has confronted several challenges which include: under-staffing at national, provincial and district levels, shortage of vehicles for transport and monitoring activities, low staff salaries and poor funding, which undermine the agency's operations (Chimhowu, Manjengwa and Feresu, 2010). Poor salaries have led to the migration of staff in search of greener pastures. This in turn has led to the loss of institutional memory, a necessary ingredient for all organizations.

However, beyond the district level, environmental issues are governed by the Traditional Leader's Act of 1999, which empowers headmen and village assemblies to enforce all environmental planning and conservation by-laws on behalf of the chief, district councils and the government. The involvement of traditional leaders such as kraal heads and chiefs is crucial as they command much respect at the grass roots level and are the custodians of cultural norms and values (Chandiwana and Moyo-Mhlanga, 1996). Another important aspect of SD is environmental education (EE). Although it dates back to the colonial era (Chikunda, 2007), during the last two decades it has been re-invigorated due to the outcomes of the Rio Summit (Palmer, 1998). Over the years EE has become an important tool for raising environmental awareness among members of the public. The ultimate goal of EE is to promote natural resource conservation at local, national and global levels with a view to promoting SD. As a member of the SADC grouping, Zimbabwe has been part of the UN Decade for SD (SADC Report, 2006 4). The decade ran from 2005 to 2014. It was viewed as an opportunity to achieve two goals, namely integrating the principles, values and practices of SD into all aspects of education and learning, and encouraging behavior change in order to create a more sustainable future in terms of environmental quality, economic viability and social justice for the present and future generations.

The United Nations Education for Sustainable Development (UNESD) had four main objectives (The SADC Report 4, 2006). Firstly, it sought to facilitate networking linkages, exchange and interactions among stakeholders in SD. Secondly, it also increased the quality of teaching and learning in the education for SD. Thirdly, it helped countries to make progress towards and attain the millennium development goals (MDGs) through ESD efforts. Finally, it provided countries with new opportunities to incorporate ESD into education reform efforts. However, Zimbabwe, just like its SADC neighbors faces challenges in its attempt to achieve SD. The first one is the lack of vision at national level in terms of policy review and development. The second problem is the in-appropriate and in-adequate laws that support environmental policy. Thirdly, there is a challenge in the institutionalization of SD into education systems. Finally, too much bureaucratic red tape restricts policy implementation. For example, in Zimbabwe none of the nine state universities offers degrees on EE either at undergraduate or post-graduate levels. On the other hand in spite of the country's EE policy document's requirements, no EE centres have been established in the country (GoZ, 2003.

The Agricultural, Technical, and Extension Services (AGRITEX) department falls under the Ministry of Agriculture, Mechanization and Engineering. It plays a major role in the country's quest for SD. In its quest, it is guided by several objectives which include: training farmers and providing advice and extension services. Secondly, it disseminates and promotes agricultural and market related information. Thirdly, it

mobilizes farmers for targeted production while monitoring crops and livestock production trends at national, provincial and district levels. It also disseminates and promotes the adoption of new technologies through on-farm trial and demonstrations.

In addition, these farmers also receive EE information in the form of conservation education. Furthermore, it organizes field days and exchange visits while providing regular reports to the ministry and other stakeholders. Finally, it educates farmers and communities on how to care for their land, soil, water and other natural resources. From 2000 to 2011, for example, 6 689 master farmers were trained in the seven districts of Masvingo Province (Table 1).

Table 1: Master farmers trained in Masvingo Province from 2000 to 2011

Year	No of Master farmers trained
2000	303
2001	250
2002	315
2003	158
2004	433
2005	1015
2006	1086
2007	1015
2008	760
2009	190
2010	404
2011	760
Total	**6 689**

Source: AGRITEX Masvingo Province (Zimbabwe)

However, in spite of these achievements, AGRITEX has experienced several challenges, which include: lack of transport for extension officers, shortage of resources such as computers at both district and provincial levels, lack of accommodation for extension workers especially in resettlement areas. Another challenge is that of poor remuneration for staff, sub-standard communication systems at all levels and lack of effective mechanisms to enforce legislation on resource conservation. Most of these challenges are due to the under-funding of AGRITEX, which undermines its operations at national, provincial, district and ward levels. There is a need for more funds to improve the working conditions of staff at all levels. However, this problem applies to the rest of the civil service due to the near collapse of the national economy in recent years (Chimhowu, et.al, 2010). In recent years, all agricultural training colleges now offer training on EE in order to equip the students for the world of work when they will teach communities on this vital form of education (Mapira, 2014).

Although Environmental Impact Assessments (EIAs) have been mandatory since 1998, the Fast Track Land Reform Programme was never preceded by EIAs (Chimhowu, et. al, 2010). However, this is not surprising as the country has been criticized for the lack of political will when it comes to environmental issues (lopes, 1996). The future of SD in Zimbabwe depends on several factors. Firstly, the country heavily depends on coal as a source of energy (Chandiwana, 1996). Although other sources of energy such as solar and wind has been developed, they still lag behind traditional sources such as coal and oil. Since independence, rural electrification has been introduced in order to reduce dependence on wood fuel (Lopes, 1996). However, most of the projects have targeted at institutions such as schools, clinics and shopping centres, leaving out the majority of villagers.

Secondly, Zimbabwe's EE programme has a *biophysical* orientation at the expense of targeting EE for the environment which has a potential to generate behavior change among citizens (Fien, 1993). Thirdly, there is a lot of deforestation in the newly established resettlement schemes. This has led to the destruction of ecosystems in these areas. Fourthly, EMA lacks the capacity to reach remote areas owing to the lack of vehicles for transport and the necessary manpower. Furthermore, the lack of political will at the policy making level is a major challenge. Although Zimbabwe is renowned for producing very good policies, implementation has been very weak (Lopes, 1996). Unless the government changes its attitude on this issue, SD is unlikely to be achieved at the national level.

7. Conclusion

This paper has examined the problem of land degradation and sustainable development in Zimbabwe since the colonial era. It shows that land degradation (especially soil erosion and deforestation) date back to the days of colonialism. The Land Apportionment Act of 1930 divided the country into European and Native areas with blacks being forced to occupy marginal areas while whites took the best land. This unfair division of land between black and white Rhodesians led to massive soil erosion among the so-called TTLs. New methods of cultivation such as the ox-drawn plough also led to massive deforestation in these areas. During the pre-colonial era blacks used the hoe for cultivation. This method did not require the massive clearance of vegetation which would in deforestation. Hence, this form of agriculture was not a threat to natural ecosystems. However, in 2000 the country embarked on a massive land expropriation from white farmers in an attempt to redress colonial imbalances in the ownership of land at the national level. The main aim of this programme was to honor liberation war promises that had not been fulfilled since independence in 1980.

Although land has been re-distributed to blacks, land degradation in the newly resettled areas has worsened and an environmental crisis is looming in these areas. In 2003, the country developed an EE policy document which made several recommendations. One of them was the introduction of EE centres throughout the country. However, nearly two decades later none has been established so far. However, this is not surprising as Zimbabwe has been criticized for lacking the necessary political will when it comes to environmental issues. Although Zimbabwe now has an impressive EE policy document, reality on the ground shows that its school syllabi lay emphasis on the acquisition of *scientific facts* about the environment rather than focusing on behavior change. Just like its SADC neighbors the country has a long way to go in its pursuit of SD at the local and national levels. Unless major changes occur in the country's approach to environmental issues, the future of SD in Zimbabwe remains bleak.

About the Author

Professor Jemitias Mapira (PhD) is a human geographer and environmental scientist who has been employed at Great Zimbabwe University since 2003. He holds a doctorate in Environmental Education from Stellenbosch University in South Africa, a Masters in Environmental Science from the University of Botswana and a BA in Geography and English from the University of Zimbabwe. He has published extensively in his areas of research interest.

References

1. Bond, P. and Manyanya, M 2003. *Zimbabwe's Plunge: Exhausted Nationalism and the Search for Social Justice*, Weaver Press Ltd, Harare
2. Bulpin, T.V. 1968. *To the Banks of the Zambezi*, Books of Africa, Cape Town
3. Chandiwana, D. and Moyo-Mhlanga, K.1996. 'The Role of Grassroots Movements Conservation and Sustainable Development' In Lopes, C. (ed). Balancing Rocks: Environment and Development in Zimbabwe, UNDP, SAPES Books, Harare
4. Chibisa, P. and Mapira, J. 2013. *Agricultural Geography Module HGES 405*, ZOU Press, Harare
5. Chikunda, C. 2007. 'Zimbabwe's Better Environmental Science Teaching Programme: A Step towards education for sustainable development', *Southern African Journal of Environmental Education Vol 24*: 158-170

6. Chimhowu, A. Manjengwa, J. and Feresu, F.2010. Moving Forward in Zimbabwe: Reducing Poverty and Promoting Growth, IES, UZ, Harare
7. Fien, J.1993. *Education for the Environment: Critical Curriculum Theorising and Environmental Education*, Deaken University, Geelong
8. GoZ 2003. *Zimbabwe National EE Policy and Strategies*, Ministry of Environment and Tourism, Government of Zimbabwe, Harare
9. GoZ 2009. *National Environmental Policy and Strategies*, Ministry of Environment and Natural Resources Management, Government of Zimbabwe, Harare
10. Kay, G.1970. Rhodesia: A Human Geography, University of London Press, London
11. Kay, G.1977. 'Rhodesia: Physical and Social Geography' In *Africa South of the Sahara19777-1978*, Europa Publications Ltd, London
12. Mapira, J. 2014 'Zimbabwe's Environmental Education Programme and its Implementation for Sustainable Development' Unpublished PhD Thesis, Department of Curriculum Studies, Stellenbosch University, Stellenbosch
13. Palmer. J.A.1998. *Environmental Education in the 21st Century: Theory Practice, Progress, and Promise* Second Edition, Routledge, London
14. SADC Report 4 2006. Share-net, Howick
15. Scoones I., Marongwe, N., Mavedzenge, B., Murimbarimba, F., Mahenehen, J., and Sukume, C. 2011.' Zimbabwe's Land Reform-A Summary of Findings' www.zimbabweland.net and RformBooklet Web pdf (Accessed 08/04/13)
16. Scoones I. 2017. www.thezimbabwean.co/2017/land-agriculture-zimbabwe following-land-reform/
17. The Natural Resources Board Act of 1941, Government Printers, Salisbury
18. *WCED 1991, Our Common Future: World Commission on Environment and Development*, Oxford University Press, Oxford
19. Whinwiri, EE, Mashingaidze, K and Rukuni, M 1992. *Small-scale Agriculture in Zimbabwe*, Rockwood Publishers, Harare